

Serial No. 09/900,400  
Attorney Docket No. F0541  
Firm Reference No. AMDSP0433US

Reply to Office Action Dated August 14, 2003  
Reply Dated September 23, 2003

#### **REMARKS**

Claims 1-8 and 18-20 are pending. A telephone interview was conducted with the Examiner on September 9, 2003 and is summarized below.

### **I. SUMMARY OF TELEPHONE INTERVIEW**

On September 9, 2003, a telephone interview was conducted between Examiner Kiesha Rose and Mark Saralino and Andrew Romero on behalf of the applicants. Based on the comments presented in detail below, the Examiner indicated that the claims appeared distinguishable over the prior art cited for the reasons discussed herein. The Examiner did indicated further review may be needed. The Examiner also indicated that should a new basis for rejection be found the Examiner would provide the applicants with a non-final Office Action.

### **II. REJECTION OF CLAIMS UNDER 35 USC §103(a)**

Claims 1-8 and 18-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,159,778 issued to Kim ("Kim") in view of U.S. Patent No. 5,578,865 issued to Vu et al. ("Vu") and U.S. Patent No. 5,245,208, issued to Eimori ("Eimori"). Withdrawal of the rejection is respectfully requested for at least the following reasons.

With reference to FIG. 1 of the present invention (reproduced below for the Examiner's convenience), claim 1 includes, *inter alia*, the features of "a semiconductor active region 14 disposed directly on the insulator layer 16, ...., the source 30/36 and body 34 forming an abrupt or hyperabrupt source/body junction 40," and a graded (i.e., less abrupt) drain/body junction 42 (reference numbers added). The extent of an implanted region 60 is indicated by solid line 62, i.e. the region implanted with ions selected from germanium, xenon, silicon, argon and krypton the presence of such ions forms the graded drain/body junction 42, (see, for example, pars. 17 and 19, 21-26 and 28-29, FIG. 1, and claim 11). The graded drain/body junction 42 is less abrupt then the abrupt or hyperabrupt source/body junction 40 which does not have the presence of the additional implanted ions.

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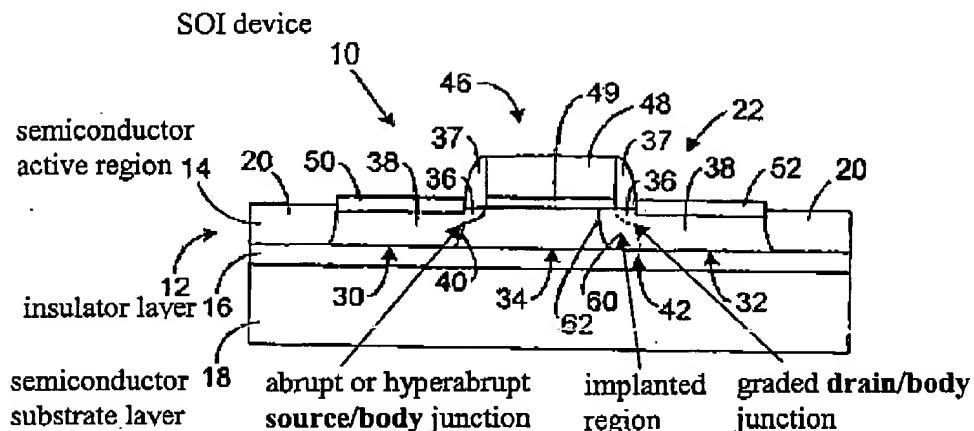


Figure 1: FIG. 1 of Present Specification

Referring now to FIG. 1 of Kim (reproduced below for the Examiner's convenience), Kim discloses, at best, a less abrupt junction on a source side of a transistor. (See, for example, the Abstract, FIG. 1, Col. 3, lines 6-12 and Col. 4, lines 19-31). Kim does not disclose a graded drain/body junction as recited in claim 1. Further, Kim is concerned with a different issue than the present invention.

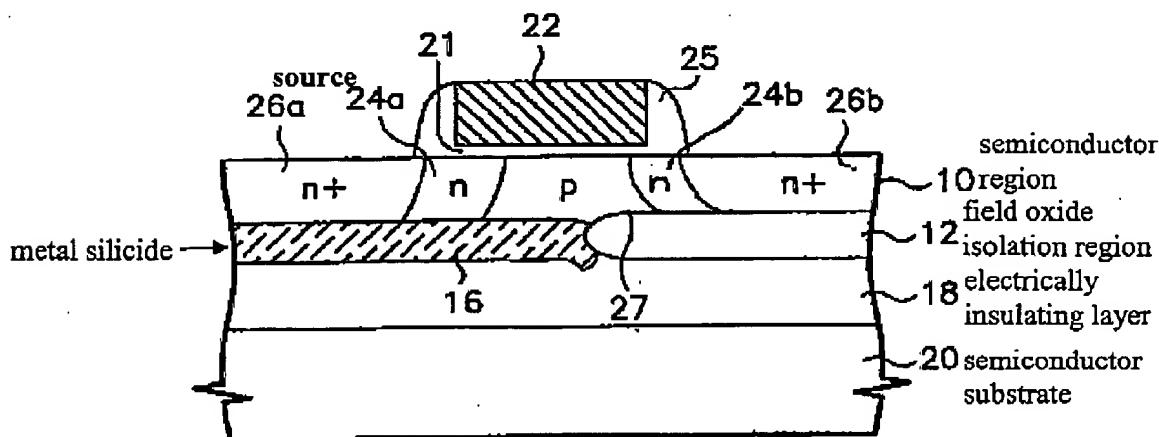


Figure 2: FIG. 1 of Kim

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Referring now to FIG. 3c of Vu (reproduced below for the Examiner's convenience), Vu at best is similar to Kim and discloses a less abrupt junction on a source side of a transistor. The less abrupt junction of Vu is formed by implanting germanium ions. (See, for example, the Abstract, Col 4, lines 19-29 and FIG. 3C)

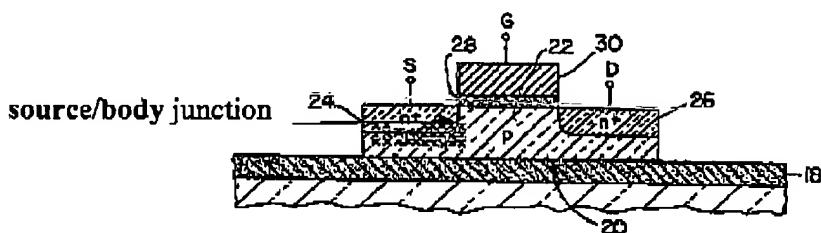


FIG. 3C

Figure 3: FIG. 3C of Vu

Vu does not make up the deficiencies of Kim. For example, Vu does not disclose or suggest an abrupt or hyperabrupt source/body junction and a graded drain/body junction as claimed in claim 1. Further, in the present invention, the source/body abrupt junction 40 aids in reducing floating-body effects by increasing junction leakage, while the drain/body graded junction 42 (i.e., a less abrupt junction) aids in reducing parasitic junction capacitance. More particularly, the ion implanted region 60 helps to introduce lattice defects near the drain/body junction 42, making the junction leaky, which reduces floating body effects. (See, for example, par. 18.)

Accordingly, claims 1-8 and 18-20 are patentable over Kim and Vu for at least the reasons stated above. Further, Eimori does not make up for the deficiencies of Kim and/or Vu. That is, Eimori does not disclose a graded drain/body junction as claimed in claim 1.

Therefore, since Kim alone or in combination with Vu and/or Eimori does not teach or suggest one or more of the features as claimed in claim 1, the claims that depend therefrom are believed to be in condition for allowance for at least the reasons stated above.

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### III. CONCLUSION

In light of the foregoing, it is respectfully submitted that the present application is in condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present invention.

Any fee(s) resulting from this communication is hereby authorized to be charged to our Deposit Account No. 18-0988; Our Order No. AMDSP0433US.

Respectfully submitted,

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